

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

The Commissioner for Patents  
Washington, D.C. 20231

## PRELIMINARY AMENDMENT

Sir:

Prior to examination on the merits, please amend the application as follows:

**IN THE SPECIFICATION:**

Please amend the specification as follows:

At page 1, line 7 insert the following paragraph:

--This is a divisional application of Application No. 08, 902,160, filed July 29, 1997.--

Please substitute the paragraph starting at page 1, line 10 and ending at line 18 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Maintenance against a trouble in an industrial equipment requiring maintenance, such as a semiconductor device manufacturing apparatus has been made such that, upon occurrence of a trouble, maintenance personnel instruct a countermeasure to an operator for the manufacturing apparatus through telephone or facsimile communication or directly visit a factory where the manufacturing apparatus is installed. This also applies to periodical maintenance.--

Please substitute the paragraph starting at page 2, line 24 and ending page 3, line 12, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Another aspect is attained by providing a monitor apparatus arranged on an industrial equipment side to constitute a remote maintenance system for maintaining an industrial equipment installed at a remote location, comprising, obtaining means for detecting occurrence of a trouble of one or a plurality of industrial equipments and obtaining status information representing a state of the trouble, and communication means for notifying, through the internet, a management apparatus for performing centralized maintenance management of the industrial equipment of status information obtained by the obtaining means, and for receiving response information sent from the management apparatus through the internet in response to notification of the status information.--

Please substitute the paragraph starting at page 13, line 2 and ending at line 5 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--If, however, a countermeasure is required (i.e., "YES" in step S402), the person in charge selects an appropriate countermeasure by looking up the information stored in the trouble database (step S403).--

Please substitute the paragraph starting at page 17, line 5 and ending at line 20, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached

--Fig. 7 is a conceptual view of an industrial equipment maintenance system according to the second embodiment of the present invention. In the first embodiment, the plurality of user factories each having the industrial equipment are connected to the management system for the vendor for the industrial equipment through a communicating means, and the maintenance information of the industrial equipment of each factory is communicated through the communicating means. However, in the second embodiment, a factory having industrial equipments of a plurality of vendors is connected to the management systems of the vendors for the plurality of industrial equipments through a communicating means using the internet, thereby communicating maintenance information of each industrial equipment through the communicating means.--

**IN THE CLAIMS:**

Please cancel Claims 1-30 without prejudice to or disclaimer of the subject matter contained therein.

Please add new claims 31-73.

31. (New) A remote maintenance system for industrial equipment installed at a remote location, said system comprising:

a database system which is connected to the Internet and stores maintenance information of the industrial equipment; and  
a security system that allows a limited user of the industrial equipment to access the database through the Internet for handling a trouble associated with the industrial equipment.

32. (New) The system according to claim 31, wherein said database is updated based on the access of the user.

33. (New) The system according to claim 31, wherein said database stores information for identifying an industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble states.

34. (New) The system according to claim 31, wherein said database system automatically notifies an appropriate personnel of the trouble with the industrial equipment.

35. (New) The system according to claim 34, wherein said database system automatically sends an e-mail to the appropriate personnel.

36. (New) The system according to claim 31, further comprises a LAN system connecting a plurality of computers and the database system, each of the plurality of computers being capable of accessing the database system through the LAN system.

37. (New) The system according to claim 31, wherein said security system comprises at least one of a codec system providing an encoded communication and a fire wall.

38. (New) The system according to claim 37, wherein said codec system periodically changes codec algorithms.

39. (New) The method according to claim 31, wherein the industrial equipment comprises a semiconductor manufacturing apparatus and the maintenance information comprises trouble information of the semiconductor apparatus.

40. (New) A manufacturing system in a factory, comprising:  
industrial equipment installed in the factory for manufacturing products;  
a host computer; and  
a LAN system connecting to the industrial equipment and the host computer, wherein the host computer is connected to the Internet to allow access to a remote computer placed at a remote location from the factory through the Internet, the remote computer providing at least one of database storing maintenance information of the industrial equipment

and a software library for the industrial equipment.

41. (New) A method according to claim 40, wherein the database stores information for identifying industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble states.

42. (New) A system according to claim 40, wherein the industrial equipment comprises different types of semiconductor apparatuses.

43. (New) A system according to claim 40, wherein the industrial equipment comprises the same types of semiconductor apparatuses.

44. (New) A manufacturing system, comprising:  
a computer which is connected to the Internet and provides a database storing information of industrial equipment;  
a first manufacturing factory having the industrial equipment and a LAN system capable of accessing the database through the Internet; and  
a second manufacturing factory, located at a remote location from said first manufacturing factory, having the industrial equipment and a LAN system capable of accessing the database through the Internet.

45. (New) The system according to claim 44, wherein the database stores

information for identifying an industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble states.

46. (New) The system according to claim 44, wherein said computer automatically notifies an appropriate personnel of trouble with the industrial equipment.

47. (New) The system according to claim 46, wherein said computer automatically sends an e-mail to the appropriate personnel.

48. (New) The system according to claim 44, wherein the industrial equipment comprises a semiconductor manufacturing apparatus and the information comprises trouble information of the semiconductor apparatus.

49. (New) The system according to claim 44, wherein said first and second manufacturing factors belong to a single user.

50. (New) The system according to claim 44, wherein said first and second manufacturing factories belong to different users from each other.

51. (New) A method for shearing information of industrial equipment, comprising:

providing a database system which is connected to the Internet and

stores information of the industrial equipment;  
allowing a first specified user of the industrial equipment with a first security system to access the database through the Internet; and  
allowing a second specified user, different from the first specified user, of the industrial equipment with a second security system to access the database through the Internet, wherein the first and second security systems have different kinds of codec systems from each other.

52. (New) The method according to claim 51, wherein the database stores information for identifying an industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble states.

53. (New) The method according to claim 51, further comprising a step of automatically notifying an appropriate personnel of trouble with the industrial equipment.

54. (New) The method according to claim 53, wherein said notifying step comprises automatically sending an e-mail to the appropriate personnel.

55. (New) The method according to claim 51, wherein each of the first and second security systems comprises at least one of a codec system providing an encoded communication and a fire wall.

56. (New) The method according to claim 51, wherein each of the codec systems periodically changes codec algorithms.

57. (New) The method according to claim 51, wherein the industrial equipment comprises a semiconductor manufacturing apparatus and the information comprises trouble information of the semiconductor apparatus.

58. (New) A method for sharing information of industrial equipment, comprising:

providing a first database system which is connected to the Internet and stores information of first industrial equipment;

providing a second database system which is connected to the Internet and stores information of second industrial equipment; and

allowing a limited user of the first and the second industrial equipment with security systems to access the first and second databases through the Internet.

59. (New) The method according to claim 58, wherein each of the databases stores information for identifying industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble sheets.

60. (New) The method according to claim 58, further comprising a step of

automatically notifying an appropriate personnel of trouble with the first or second industrial equipment.

61. (New) The method according to claim 60, wherein said notifying step comprises automatically sending an e-mail to the appropriate personnel.

62. (New) The method according to claim 58, wherein the security system includes at least one of a codec system providing an encoded communication and a fire wall.

63. (New) The method according to claim 62, wherein each of the codec systems periodically changes codec algorithms.

64. (New) The method according to claim 58, wherein each of the first and second industrial equipment includes a semiconductor manufacturing apparatus and the information includes trouble information of the semiconductor apparatus.

65. (New) The method according to claim 58, wherein the first and second databases are provided by different vendors from each other.

66. (New) A method for sharing information of industrial equipment, the method comprising the steps of:

providing a database system which is connected to the Internet and

stores information of industrial equipment;  
connecting a plurality of departments, of a vendor who provides the equipment, with a computer network system such that each of the departments is able to access the database system, the plurality of departments including at least one of a maintenance department, a manufacturing department and a developing department; and  
allowing a user of the industrial equipment with a security system to access the database through the Internet.

67. (New) The system according to claim 66, wherein each of the departments is able to fully access the database system and the user is able to access limited information of the database system.

68. (New) The method according to claim 66, wherein the database stores information for identifying an industrial equipment, trouble states that may occur in the identified industrial equipment, and corresponding countermeasures against the registered trouble states.

69. (New) The method according to claim 66, further comprising a step of automatically notifying an appropriate personnel of trouble with the industrial equipment.

70. (New) The method according to claim 69, wherein said notifying step includes automatically sending an e-mail to the appropriate personnel.

71. (New) The method according to claim 66, wherein the security system includes at least one of a codec system providing an encoded communication and a fire wall.

72. (New) The method according to claim 66, wherein each of the codec systems periodically changes codec algorithms.

73. (New) A system according to claim 66, wherein the industrial equipment comprises a semiconductor manufacturing apparatus and the information comprises trouble information of the semiconductor apparatus.

REMARKS

This is a divisional application of Application No. 08/902,160 which was filed on July 29, 1997.

Claims 31-73 are pending in this application, with claims 31, 40, 44, 51, 58, and 66 being independent. Claims 1-30 are cancelled herein without prejudice to or disclaimer of the subject matter contained therein.

The specification has been amended to set forth the continuing lineage data for the present application and to improve its form, consistent with changes made in the parent application.

It is submitted that no new matter has been added by the amendments herein.

Consideration and an early allowance are respectfully solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C.

office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

Michael E. Kondoudis

Attorney for Applicants

Michael E. Kondoudis

Registration No. 42,758

FITZPATRICK, CELLA, HARPER & SCINTO

30 Rockefeller Plaza

New York, New York 10112-3801

Facsimile: (212) 218-2200

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO SPECIFICATION

At page 1, line 7 the following paragraph was inserted:

--This is a divisional application of Application No. 09/294,333, filed April 20, 1999.--

Please substitute the paragraph starting at page 1, line 10 and ending at line 18 with the following replacement paragraph.

--Maintenance against a trouble in an industrial equipment requiring maintenance, such as a semiconductor device manufacturing apparatus has been made such that, upon occurrence of a trouble, maintenance personnel instruct a countermeasure to an operator for the manufacturing apparatus through telephone or facsimile communication or directly visit a factory where the manufacturing apparatus is installed. This also applies to periodical maintenance.--

Please substitute the paragraph starting at page 2, line 24 and ending page 3, line 12, with the following replacement paragraph.

--According to another] Another aspect is attained by providing a monitor apparatus arranged on an industrial equipment side to constitute a remote maintenance system for maintaining an industrial equipment installed at a remote location, comprising, obtaining means

for detecting occurrence of a trouble of one or a plurality of industrial equipments and obtaining status information representing a state of the trouble, and communication means for notifying, through the internet, a management apparatus for performing centralized maintenance management of the industrial equipment of status information obtained by the obtaining means, and for receiving response information sent from the management apparatus through the internet in response to notification of the status information.--

Please substitute the paragraph starting at page 13, line 2 and ending at line 5 with the following replacement paragraph.

--If, however, a countermeasure is required (i.e., ["NO"] "YES" in step S402), the person in charge selects an appropriate countermeasure by looking up the information stored in the trouble database (step S403).--

Please substitute the paragraph starting at page 17, line 5 and ending at line 20, with the following replacement paragraph.

--Fig. 7 is a conceptual view of an industrial equipment maintenance system according to the second embodiment of the present invention. In the first embodiment, the plurality of user factories each having the industrial equipment are connected to the management system for the vendor for the industrial equipment through a communicating means, and the maintenance information of the industrial equipment of each factory is communicated through the communicating means. However, in the second embodiment, a [factor] factory having industrial equipments of a plurality of vendors is connected to the management systems of the

vendors for the plurality of industrial equipments through a communicating means using the internet, thereby communicating maintenance information of each industrial equipment through the communicating means.--

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